

B'

contacting the antibody reactive with Apo C-III with the biological sample to form complexes between the antibody and the Apo C-III containing lipoprotein particles,
contacting the Pan B antibody with the biological sample,
separating the complexed antibody-lipoprotein particles from the biological sample,
and
determining the amount of Apo C-III associated with Apo B, which is the amount of Apo C-III present in VLDL in the sample; and
determining the amount of Apo C-III present in the HDL in the sample by
providing Apo A-I monoclonal antibody immunoreactive specifically with Apo A-I [having a binding affinity and specificity similar to A1bD₅ and A1bE₂],
providing monoclonal antibody immunoreactive with Apo C-III [having binding affinity and specificity similar to XbA₃],
contacting the antibody reactive with Apo C-III with the biological sample to form complexes between the antibody and the Apo C-III containing lipoprotein particles,
contacting the anti-Apo A-I antibody with the biological sample,
separating the complexed antibody-lipoprotein particles from the biological sample,
determining the amount of Apo C-III associated with Apo A-I, which is the amount of Apo C-III present in HDL in the sample, and
determining the ratio of Apo C-III present in VLDL in the sample and Apo C-III present in HDL in the sample which is the ratio of VLDL to HDL.

Sal
C2
B1

16. ~~(twice amended)~~ A method for determining the relative ratio of VLDL to HDL comprising

determining the amount of Apo E present in the VLDL in the sample by

providing Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

providing monoclonal antibody [immunoreactive with Apo E having binding affinity and specificity similar to EfB₁] which binds to Apo E associated predominantly with VLDL,

contacting the antibodies reactive with Apo E associated with VLDL with the biological sample to form complexes between the antibodies and Apo E containing particles,

separating the complexed antibody-ApoE containing particles from the biological sample.

contacting Pan B antibody with the biological sample, and

determining the amount of Apo E associated with Apo B which is the Apo E present predominantly in VLDL in the sample;

and

determining the amount of Apo E present in the HDL in the sample by

providing Apo A-I monoclonal antibody immunoreactive specifically with Apo A-I [having a binding affinity and specificity similar to AId₅],

providing monoclonal antibody [immunoreactive with Apo E having binding affinity and specificity similar to EfD₃,] which binds to Apo E predominantly associated with HDL,

~~contacting the antibodies reactive with Apo E to the biological sample to form complexes between the antibodies and Apo E containing particles,~~
separating the complexed antibody-ApoE containing particles from the biological sample,

~~contacting Pan B antibody with the biological sample,~~
determining the amount of Apo E associated with Apo A-I, which is the amount of Apo E present in HDL in the sample, and

~~determining the ratio of Apo E present in VLDL in the sample and Apo E present in HDL in the sample which is the ratio of VLDL to HDL.~~

17. ~~(twice amended) A method for determining the relative ratio of LPA-I and LPA-I:A-II lipoprotein particles in a biological sample comprising~~
~~providing anti-Apo A-I monoclonal antibody immunoreactive specifically with Apo A-I [having a binding affinity and specificity similar to A1bD₅],~~
~~providing anti-Apo A-II monoclonal antibody immunoreactive specifically with Apo A-II [having a binding affinity and specificity similar to CdB₅];~~
~~contacting the anti-Apo A-I antibody [having a binding affinity and specificity similar to A1bE₂] with the sample to form complexes with both LPA-I and LPA-I:A-II~~
~~and determining the quantity of Apo A-I associated with both LPA-I and LPA-I:A-II lipoprotein particles; and~~

~~contacting the anti-Apo A-II antibody with the biological sample to form complexes with LPA-I:A-II and determining the quantity of Apo A-II associated with the LPA-I:A-II.~~

B1
18. (twice amended) A composition for determining the concentration of a lipoprotein, apolipoprotein, or lipid associated with a specific lipoprotein in a biological sample comprising:

antibody molecules specifically immunoreactive with a specific lipoprotein or apolipoprotein, wherein the antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies, and monoclonal antibody fragments that specifically bind to a stable, conformation independent epitope which is uninfluenced by the lipid content of the lipoprotein, apolipoprotein, or lipid associated with a specific lipoprotein.

B2
23. (twice amended) The composition of claim 18 further comprising a second monoclonal antibody immunoreactive with a second distinct epitope of the lipoprotein or apolipoprotein which is immunoreactive with the first antibody.

28. (twice amended) The composition of claim 18 for determining the relative ratio of VLDL to HDL further comprising

B3
Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal antibody specifically immunoreactive with Apo C-III [having binding affinity and specificity similar to XbA₃], and

monoclonal Apo A-I antibody immunoreactive specifically with Apo A-I [having a binding affinity and specificity similar to A1bD₅ and A1bE₂].

29. (twice amended) The composition of claim 18 for determining the relative ratio of VLDL to HDL further comprising

Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal antibody [immunoreactive with Apo E having binding affinity and specificity similar to EfB₁] which predominantly binds to Apo E associated with VLDL ,

monoclonal Apo A-I antibody immunoreactive specifically with Apo A-I [having a binding affinity and specificity similar to A1bD₅], and

monoclonal antibody [immunoreactive with Apo E having binding affinity and specificity similar to EfD₃] which predominantly binds to Apo E in HDL.

30. (twice amended) The composition of claim 18 for determining the relative ratio of LPA-I and LPA-II lipoprotein particles comprising

monoclonal Apo-A-I antibody which binds Apo A-I lipoproteins in human plasma [having a binding affinity and specificity with Apo A1bD₅]; and

monoclonal Apo A-II antibody immunoreactive specifically with Apo A-II [having a binding affinity and specificity similar to CdB₅].

42. (amended) A method for determining the relative ratio of LDL to HDL in a

biological sample comprising

B4
adding to the sample monoclonal antibody molecules immunoreactive with low density lipoprotein and not cross-reactive with high density lipoprotein and determining the amount of low density lipoprotein;

adding to the sample monoclonal antibody molecules immunoreactive with high density lipoprotein and not cross-reactive with low density lipoprotein and determining the amount of high density lipoprotein; and

determining the ratio of the amount of low density lipoprotein with the amount of high density lipoprotein.

45. (amended) A method for determining the relative ratio of first and second lipoproteins in a biological sample, comprising:

B5
determining the amount of first lipoprotein in the sample by
contacting a first monoclonal antibody immunoreactive with a first apolipoprotein on the first lipoprotein with the sample to form complexes between the first antibody and the first apolipoprotein,

contacting a second monoclonal antibody immunoreactive with a second apolipoprotein on the first lipoprotein with the sample to form complexes between the second antibody and the first antibody: first lipoprotein complexes,

determining the amount of second apolipoprotein associated with the first apolipoprotein, which is the amount of second apolipoprotein associated with the first lipoprotein;

determining the amount of second lipoprotein in the sample by

contacting a third monoclonal antibody immunoreactive with a third apolipoprotein on the second lipoprotein with the sample to form complexes between the third antibody and the third apolipoprotein,

contacting a fourth monoclonal antibody immunoreactive with a fourth apolipoprotein on the second lipoprotein with the sample to form complexes between the fourth antibody and the fourth antibody:second lipoprotein complexes,

determining the amount of fourth apolipoprotein associated with the third apolipoprotein, which is the amount of fourth apolipoprotein associated with the second lipoprotein; and

determining the ratio of first and third apolipoproteins which is the ratio of first and second lipoproteins.

46. (amended) The method of claim [43] 45, wherein the first apolipoprotein is the same as the third apolipoprotein and at least one of the second or fourth apolipoprotein is specific for the first or second lipoprotein, respectively.

47. (amended) The method of claim [43] 45, wherein the first antibody is the same as the third antibody.